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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,824	02/20/2002	Holger Birk	21295-42	7482
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HOUSTON ELISEEVA 4 MILITIA DRIVE, SUITE 4 LEXINGTON, MA 02421			NGUYEN, THONG Q	
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			2872	

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/683,824	Applicant(s) BIRK ET AL.	
	Examiner Thong Q. Nguyen	Art Unit 2872	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/12/02</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers filed under 35 U.S.C. 119 (a)-(d) based on an application filed in Germany on March 13, 2001. Applicant has not complied with the requirements of 37 CFR 1.63(c), since the oath, declaration or application data sheet does not acknowledge the filing of any foreign application. A new oath, declaration or application data sheet is required in the body of which the present application should be identified by application number and filing date.

### ***Drawings***

2. The drawings contain five sheets of figures 1-5 were received on 2/2/2002.

These drawings are objected by the Examiner for the following reason(s).

3. The drawings are objected to because of the below reasons. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

a) Figure 2 is objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "92" has been used to designate both an objective system or a microscope optic and a specimen. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

b) In each of figures 3-5, it is unclear about the component(s) to which the reference "120" refer? In particular, each figure contains two references "120" in

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which the reference shown in the top section of the left figure does not refer to any component.

***Specification***

4. The abstract of the disclosure is objected to because the term "means" is used.

Correction is required. See MPEP § 608.01(b).

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

7. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification fails to provide a proper basis for the function of the aim mark as recited in each of claims 5 and 15. In particular, while the specification in pages 8-9, section [0028] refers to two aim marks (8 and 20); however,

the specification fails to provide the function of the aim mark. It is also noted that the aim mark is not necessary as stated on last three lines of the section [0028].

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 6-7 and 17-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 6 is indefinite because it is unclear about the recitation thereof "calculating the position....sensitive sensors" (lines 6-8). In particular, what does applicant mean by "the defined optical axis form the places of impact of the coupled in light beam on the position sensitive sensors" (lines 7-8)?

b) Claim 17 is indefinite because the feature thereof "the deviation...the light beam" (line 2) lacks a proper antecedent basis. Applicant should note that the feature relating to the deviation of the light beam is referred to in claim 15, not in claim 13.

c) Claim 18 is indefinite because each of the features "the coupled in light beam" (line 4) and "the light beam" (line 5) lacks a proper antecedent basis.

d) Claim 21 is indefinite because each of the features "the deviation of the...light beam" (lines 2-3); "the first photo detector" (lines 2-3) and "the second photodetector" (line 3) lacks a proper antecedent basis.

e) The remaining claims are dependent upon the rejected base claim(s) and thus

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inherit the deficiencies thereof.

### ***Claim Objections***

10. Claims 2-3 and 7 are objected to because of the following informalities.

Appropriate correction is required.

Each of claims 2, 3 and 7 is unclear due to the recitation thereof "the set elements" (line 2 of each claims 2 and 3 and line 6 of claim 7). Applicant is invited to review the base claim 1, line 10 which recites the feature thereof "at least one set element". Should – at least one set element—be used in placed of "the set elements" in each of claims 2, 3 and 7 to make clear the feature claimed?

### ***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 13, 22-26 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Dixon (U.S. Patent No. 5,532,873).

Dixon discloses a confocal microscope having an illuminating system and a detecting system. The confocal microscope as described in columns 5-6 and

shown in figure 4a comprises a light source (102), an objective lens (204) and an optical system disposed between the light source and the objective lens for coupling in light from the light source into the microscope wherein an optical axis is defined between the light source and the objective lens. A scanning module (114, 120) is provided on the optical axis of the microscope and an adjusting system comprises a slider (406) supporting two set of lens elements ((200,202) and 400) wherein either set of lens elements can be inserted into the optical axis of the microscope for providing different illumination/viewing pattern. The optical system disposed after the light source comprises an optical element (104) for coupling in light from the light source, an illuminating pinhole (106), and a beam splitter (112). A scan module (114,120) and scan optics including lens elements. The detecting system comprises optical element (136) for coupling light from the sample to a detector (140) via a detecting pinhole (138). Regarding to the so-called "first" or "second" or "third" or "fourth" position as recited in claims 24-27, such feature(s) is/are readable from the structure of the microscope provided by Dixon because the present claims 24-27 fails to specific the location of the mentioned positions as well as the component(s) located in the mentioned position(s). For instance, any position between the lens element (103) and the beam splitter (112) could be labeled as a first position and any position between the scan module (114, 120) and the scan optics (200, 202) can be labeled as a second position...

13. Claims 13, 22-26 and 27 rejected under 35 U.S.C. 102(e) as being anticipated by Bewersdorf et al (U.S. Patent No. 6,570,705).

Bewersdorf et al disclose a confocal microscope having an illuminating system and a detecting system. The confocal microscope as described in columns 6-7 and shown in figure 2 comprises a light source (3), an objective lens system (15 and 16) having two set of lens elements disposed on opposite sides of a sample (1) and an optical system disposed between the light source and the objective lens system for coupling in light from the light source into the microscope wherein an optical axis is defined between the light source and the objective lens system. A scanning module (10) is provided on the optical axis of the microscope and an adjusting system comprises a set of optical elements movable relative to each other for the purpose of varying the optical characteristics of illumination/viewing pattern. The optical system disposed after the light source comprises an optical element (2,27) for coupling in light from the light source, an illuminating pinhole (8), and a beam splitter (9). A scan module (10) and scan optics including lens elements. The detecting system comprises a detector (5) and a detecting pinhole (18). Regarding to the so-called "first" or "second" or "third" or "fourth" position as recited in claims 24-27, such feature(s) is/are readable from the structure of the microscope provided by Bewersdorf et al because the present claims 24-27 fails to specific the location of the mentioned positions as well as the component(s) located in the mentioned position(s). For instance, any position between the lens element (7) and the beam splitter (9) could be labeled as a first position and any



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position between the scan module (10) and the scan optics having lens elements and mirrors can be labeled as a second position...

14. Claims 13-14 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwasaki et al (U.S. Patent No. 5,084,612).

Iwasaki et al disclose a confocal microscope having an illuminating system and a detecting system. The confocal microscope as described in columns 14-15 and shown in figure 10 comprises a light source (10), an objective lens system (16,17) having two lens elements disposed on a movable support (15) for adjusting the light beam, and an optical system disposed between the light source and the objective lens system for coupling in light from the light source into the microscope wherein an optical axis is defined between the light source and the objective lens system. An adjusting device (15) supports another set of lens elements (19, 20) disposed on the opposite side of the mentioned objective lens system via a sample (23) wherein the another set of lens elements is able to move for varying the light to be recorded on a detecting system. The detecting system comprises two detector elements disposed with different distances with respect to the coupling light from the sample onto the end of the fiber (24). The use of a beam splitter (26 and 28) after the fiber for guiding different light onto different detector elements is also disclosed by Iwasaki et al.

15. Claims 1, 6-14, 16-17 and 21-22, as best as understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Adachi et al (U.S. Patent No. 6,693,272).

Adachi et al disclose a confocal microscope having an illuminating system and a detecting system. The microscope as described in columns 10-11 and shown in figure 5 comprises a light source system (11) and a microscope optic (18) which in combination define an optical axis from the source system to the microscope optic. There are numerous optical elements/systems disposed on the optical axis between the source and the microscope optic. One of the elements/systems is an adjustable optical element/system (81,82) and another adjusting system (61) mounted at a position downstream from the adjustable optical element/system. The adjusting system (61) comprises a coupling device (83) having at least one element for coupling in light from the source into the system wherein the coupling system defines a coupling in point and a coupled in light beam, beam splitters (51, 52), two 2-dimensional position sensitive sensors (53, 54) wherein the beam splitter (52) splitted incident light beam into the two sensors (see column 8, lines 5-18 for the types of sensors). In column 13, Adachi et al disclose the use of a computer and a display for displaying the deviation of light with respect to normal positions on the receiving surfaces of the sensors and then provided signals to control the operation of systems (81,82) and (83) for the purpose of correction the deviation of light beam.

Regarding to the method claimed in present claims 1 and 6-10, it is noted that the steps of adjusting a portion of light beam in a microscope as recited are inherently disclosed in the system provided by Adachi et al because a user will recognize that (s)he will perform the steps of coupling light from a light source

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into the adjusting system, receiving the light from the sensors, checking the positions of the light on the surfaces of the sensors to determine whether the light is on normal position on the surface of the sensor and then making adjustment to the adjusting system for correcting a deviation of light.

Regarding to the so-called "first" or "second" or "third" or "fourth" position as recited in claims 9-12, such feature(s) is/are readable from the structure of the microscope provided by Adachi et al because the present claims 9-12 fails to specific the location of the mentioned positions as well as the component(s) located in the mentioned position(s). For instance, any position between the system (61) and the beam splitter (51) could be labeled as a first position and any position between the scan module (15) and the scan optics having lens elements can be labeled as a second position...

### ***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi et al in view of Dixon.

The microscope provided by Adachi et al as described above meets all of the limitations relating to the optical elements as recited in present claim 23 except the feature relating to an illumination pinhole located after the light source.

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However, the use of a light source system having a light source and an illumination pinhole disposed after the light source is known to one skilled in the art as can be seen in the scanning microscope having an illuminating system and a detecting system provided by Dixon. In the illuminating system, Dixon teaches the use of an illuminating pinhole (106) after the light source system (102-104) for the purpose of controlling the size of light beam before it enters a beam expander. Regarding to the so-called "first" or "second" or "third" or "fourth" position as recited in claims 24-27, such feature(s) is/are readable from the structure of the microscope provided by Adachi et al because the present claims 24-27 fails to specific the location of the mentioned positions as well as the component(s) located in the mentioned position(s). For instance, any position between the system (61) and the beam splitter (51) could be labeled as a first position and any position between the scan module (15) and the scan optics having lens elements can be labeled as a second position...

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope having an illuminating system provided by Adachi et al by using an illuminating pinhole after a light source as suggested by Dixon for the purpose of controlling the size of a light beam.

18. Claims 2-5, 15 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi et al in view of Muller et al (U.S. Patent No. 5,657,128).

The microscope with an illuminating system and a detecting system as provided by Adachi et al meets all of the limitations recited in present claims 5 and 15

except the use of markings for the purpose of providing a visual control of the position of light beam. However, the use of a detecting system having position sensitive sensor and a computerized control system wherein the deviation of light impact point is shown in the monitor and the use of marks or high-lighted reference in the monitor to show the difference is suggested to one skilled in the art as can be seen in the microscope provided by Muller et al. See columns 2-3 and 7 and figures 4, for instance. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the system provided by Adachi et al by using marks/high-lighted references on the monitor to provide a visual control and then for providing signals to mechanisms used for operating optical elements to correct for the deviation of the light beam as suggested by Muller et al for the purpose of providing visually information to a user.

### ***Conclusion***

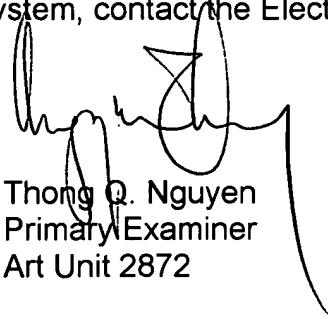
19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is (571) 272-2316. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thong Q. Nguyen  
Primary Examiner  
Art Unit 2872

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